

2.1 Overview

The health and functioning of urban creeks are directly linked to a number of physical, biological and cultural processes and practices. Encroachment by humans across the **watershed** and into the riparian corridor in the form of development (buildings, roads, and other facilities) changes the **hydrologic** and **hydraulic** function and character of the creek. These impacts often lead to degradation of habitat values through increased erosion, loss of native vegetation and armoring of channel bed and banks. In turn, the aesthetic, educational and recreational values of the creek are also compromised.

Corte Madera Creek is a valuable resource – to frogs, birds, fish, plants and people. The creek is a physical, aesthetic, recreational and educational element that contributes to the character of Portola Valley. The large native redwood and oak trees and diverse plants that thrive along the creek provide habitat to many animals and birds that people enjoy and value. The creek is a place of solitude and contemplation, just as it is an opportunity to teach and learn about one of California's most valuable ecosystem types. Human actions along and within the creek directly affect its function and health and can, in fact, influence flood and property protection.

Over time, cumulative impacts from traditional responses to bank stabilization have contributed to and in some situations exacerbated the problems and issues experienced along Corte Madera Creek. Traditional bank protection responses are driven by limited objectives that rarely consider habitat values, project setting, creek function and aesthetic conditions. Well-planned and effective multi-objective bank stabilization approaches that consider and enhance these conditions can be implemented for property protection, erosion potential and creek enhancement.

The Maintaining Corte Madera Creek: A Citizens' Guide to Creek-Side Property Protection report provides a tool for the Town of Portola Valley, its staff, the residents and the community at large to use in considering bank stabilization and revegetation efforts on Corte Madera Creek. The Guide provides an overview of the Corte Madera Creek watershed, creek function and habitat values as a basis for understanding and developing proposed approaches for bank stabilization. Typical erosion conditions and problems as well as the less-than-desirable traditional means utilized for erosion protection are also identified and described.

The Guide recognizes the need and the right of property owners to protect their property from stream-induced erosion and property loss. While some, gradual erosion is a natural process within active creek systems, accelerated erosion resulting from watershed development damages both habitat and property. This report provides an examination and explanation of the natural conditions of Corte Madera Creek and the physical processes that create those conditions. Unfortunately many traditional **armoring** approaches and other informal methods of creek bank protection have degraded habitat conditions and generally increased erosion risk throughout the creek corridor. The Guide does not

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address specific problems at specific locations, but will help to identify the typical problem conditions and less desirable bank protection measures by **reach** within the study area.

The Citizens' Guide is also a tool to engage the Portola Valley community to educate and encourage alternative and beneficial practices in creek bank protection, restoration and ultimately, watershed stewardship. The report is not a regulatory document, but should be used to inform and guide creek related stabilization and enhancement projects in the future. It is beneficial to integrate a watershed or system-based understanding of Corte Madera Creek so that future bank stabilization projects will not only effectively protect property, but are also realized as opportunities for improved creek function and habitat enhancement.

The project team initially focused on a series of reconnaissance level surveys, relevant expertise and experience working with creek restoration and bank stabilization efforts in addition to reviews of existing studies and reports to develop the study and report. The findings of the surveys and preliminary conceptual stabilization approaches were presented to the Town and JPA for review and comment as they were completed. Report sections were submitted to the Town, JPA and selected review committee. Discussions with and comments from the review committee helped to focus report content and format as well as to direct the outreach component of the project.

Through a series of coordinated and hosted 'Creek Walks' the project team introduced the Citizens' Guide, its intent and objectives to creek-side property owners and other stakeholders. The team solicited input from these public sessions.

2.2 Project Approach

The Guide focuses on a six-mile section of Corte Madera Creek defined by Mapache Road (downstream limits) and Rengstorff Gulch in the headwaters/ upper watershed to examine existing conditions and to propose conceptual restoration approaches. Design engineering experience was integrated with the reconnaissance surveys to develop realistic and cost effective **guidelines** for bank stabilization. The team's prior experience with a variety of tested multi-objective stabilization projects ranging from large scale restorations to site specific property and infrastructure protection efforts also serve as a basis for the conceptual approaches described in this document.

In addition, the report describes the study area of Corte Madera Creek in Portola Valley from a **geomorphic** and **biological** perspective. The presentation of the watershed, its resources and alternative approaches to bank stabilization and revegetation is intended to build awareness and support for beneficial stabilization practices.

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